

REMARKS

The withdrawal of the prior rejections based on the Crenshaw, Bouwknecht, Hauser, Egle and Fadler nee Jack et references is acknowledged with appreciation.

Claims 1-8, 17, 20, 22, 25-26, 28, 30, 34, and 36-37 were rejected under 35 USC 103(a) as being unpatentable over Crenshaw (US 5,861,044) in further view of Bouwknecht et al (US 4,859,207). Specifically, the Examiner stated that "Crenshaw teaches a process for manufacturing patterned fabrics comprising the steps of applying chemicals containing a liquid repellent either alone or with other chemicals such as dye to a textile fabric and subsequently finishing said fabric to form a patterned fabric", and that the "chemicals include a liquid repellent which can be of literally any type including fluorocarbons, silicones, waxes and so forth." In addition, the Examiner states that Crenshaw teaches "various means for applying streams of atomized droplets of marking materials to produce a pattern on the substrate, such as rotating roll and brush dispersal unit, or any type of known textile dyeing technology can be utilized with any type of textile fabrics in which the face finish can be altered by heat that includes woven, tufted, knitted, nonwoven, or flocked." The Examiner acknowledges that Crenshaw fails to disclose the instant invention, stating "Crenshaw et al. do not specifically teach a process for manufacturing fabric wherein the entire fabric is exposed to dye

and wherein the chemical substance comprises a print paste, or an optical brightener as recited by the instant claims.”

The Examiner then states that “Bouwknegt et al. teach a process for dyeing textile planar fabric from natural or synthetic polyamides with anionic dyes by: (a) locally applying a resist agent by itself or in conjunction with an anionic dye or fluorescent whitening agent, (b) subjecting the textiles to a heat treatment, and (c) carrying out ground dyeing with a dye liquor that contains a further anionic dye, which process comprises using a resist agent.” The Examiner further states that “Bouwknegt et al. teach that the formulations for the selective (local) applications of the resist agent alone or in conjunction with the dye or fluorescent whitening agents, as well as the dye liquors for the cross-dyeing, conveniently contain mineral acids”...and “that in addition to resist agents, the dyes or fluorescent whitening agents, further assistants conventionally employed in dyeing technology may be concurrently used.” From this the Examiner concluded that “it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the teaching of Crenshaw by exposing the entire fabric to the dye as recited by Bouwknegt et al. with a reasonable expectation of success, because the teachings of Crenshaw in combination with Bouwknegt et al. suggest a process for manufacturing fabric wherein the entire fabric is exposed to dye.” In addition, the Examiner concluded that it “would have been obvious to one of ordinary skill in the art, at the time the invention was made, to utilize a print paste, or optical brightener in the process

taught by Crenshaw, with a reasonable expectation of success, because Bougwknegt et al. teach the utility of aqueous printing pastes and fluorescent whitening agents in the dyeing process and further, Crenshaw teaches various chemical additives in general."

As noted in the prior response and the previous interview with the Examiner, Crenshaw describes a process of carving a pattern on a pile fabric by printing a liquid repellant on a pile fabric in a pattern, finishing the fabric, rewetting the fabric with a liquid, and then exposing the fabric to a pressurized heated gas, which selectively carves the dry areas printed with the liquid repellent and leaving the wetted areas protected and uncarved (Col. 1, lines 21-30.) The portion of the patent relied upon in the rejection is the recitation in Claim 6 of the Crenshaw patent, which describes a multi-step process of applying a first chemical solution comprising a liquid repellent to a surface of the web of fabric, applying a second chemical solution comprising a dye to the surface of the fabric, applying liquid to the fabric and directing pressurized heated gas, to carve the surface of the fabric where the liquid repellent was applied. Reference to the specification shows that this claim is directed to the process described in Fig. 3, which uses a series of screen print heads to create a pattern. As set forth in Col. 3, line 50 to Col. 4, line 26, each of the chemical applications is performed in a pattern. Crenshaw specifically requires the use of pressurized heated air to modify the treated fabric, and achieves the effect by partially melting the fiber. Bouwknegt teaches the use of a chemical reaction to block the dyeing

of polyamide fabrics. It is the *chemical* bonding of chemical to fabric that allows the patterning.

In contrast, the instant invention is directed to a process for creating patterned fabrics using dye processes previously used for dyeing solid fabrics. In other words, substantially the entire fabric is exposed to the dye, while in Crenshaw, only a patterned portion of the fabric is exposed to the dye, which may or may not correspond with the patterned areas that have been treated with the liquid repellent. The process of the invention is not reliant on a chemical reaction to achieve the patterned effect, rather it utilizes a novel physical bonding mechanism that prevents the treated regions from becoming fully saturated, in combination with the step of exposing substantially the entire fabric to the dye. Furthermore, Bouwknecht is limited to polyamide fabrics and only allows the use of anionic dyestuffs, while the process of the invention is not limited in these ways. There is no disclosure or suggestion in the references, taken alone or in combination, of a process such as that set forth in the claims. Rather, it appears that the Examiner has attempted to achieve the claimed invention through hindsight assembly of bits and pieces from different references, without any motivation within the references to do so. Therefore, it is respectfully requested that the rejection be withdrawn.

Claims 21 and 35 were rejected under 35 USC 103(a) as unpatentable over Crenshaw and Bouwknecht et al. as applied to claims 1-8, 17, 20, 22, 25-26,

28, 30, 34, and 36-37 and further in view of Hauser et al. (US 5,667,533.)

Specifically, the Examiner acknowledged that Crenshaw and Bouwknecht et al. do not “teach a process for manufacturing fabric to form a heather fabric.” However, the Examiner stated that Hauser et al. teach textile fabrics and garments having a random irregular heather-like appearance that are produced by impregnating a textile fabric with an aqueous pretreatment composition comprising a fiber reactive cationic compound, and a number of other processing steps. From this, the Examiner concluded that it “would have been obvious for one of ordinary skill in the art at the time the invention was made to use two types of fibers to form a heather fabric with a reasonable expectation of success, because Hauser et al. teach a method of forming heather fabrics and Crenshaw et al. and Bouwknecht et al. teach a method of manufacturing patterned fabrics with any type of textile fabrics in general.”

Hauser teaches a chemical bonding to cellulosic fibers only to create a heather appearance. There is no motivation to combine this teaching with Crenshaw and Bouwknecht, since the references fail to teach the claimed process of applying a water soluble chemical substance to selected regions of a fabric to inhibit wetting in those regions, and then exposing the entire fabric to a dye liquor to saturate the untreated regions while less than fully saturating the treated regions.

Claims 3, 4, 6, 9, 14, 16, 27, 29 and 31 were rejected under 35 USC 103(a) as being unpatentable over Crenshaw and Bouwknecht et al. as applied to claims 1-8, 17, 20, 22, 25-26, 28, 30, 34, and 36-37 and further in view of Egli et

al (US 3,743,477). Specifically, the Examiner acknowledged that Crenshaw and Bouwknecht "do not specifically teach a water soluble chemical substance comprising an alginate print paste, the specified dyestuff, and the other requisite components as recited by the instant claims", and that Egli et al. teach a process for the reservation of natural polyamide fibres against anionic dyes and acid dyeable synthetic fibers, which process consists of applying a solution or dispersion of one or more colorless, fibre-reactive compounds to areas of a material that are to be reserved, and fixing the compound prior to coloration of the material." The Examiner concluded that it "would have been obvious to one of ordinary skill in the art, at the time the invention was made, to utilize an alginate print paste and disperse dyes in the process taught by Crenshaw and Bouwknecht et al., with a reasonable expectation of success, because Egli et al. teach the utility of alginate print pastes and disperse dyes in the dyeing process and further, Crenshaw and Bouwknecht et al. teach the utility of various methods of dyeing in general.

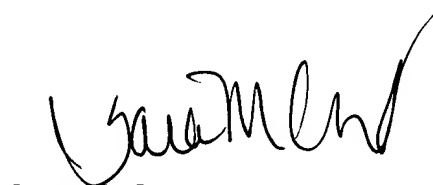
Egli is directed to a process for the reservation of natural polyamide fibres against anionic dyes and acid dyeable synthetic fibers. The claims are allowable for the reasons set forth with respect to the Crenshaw and Bouwknecht patents; there is no motivation in any of the references to utilize an alginate print paste and disperse dyes in Crenshaw to achieve the invention, absent an attempt in hindsight to assemble Applicant's invention.

Claims 10-13, 15, 18-19, 23-24, 32-33 and 38-42 were rejected under 35 USC 103(a) as being unpatentable over Crenshaw and Bouwknecht et al. as applied to claims 1-8, 17, 20, 22, 25-26, 28, 30, 34, and 36-37 and further in view of Fadler nee Jack et al. (US 4,023,925.) Specifically, the Examiner acknowledged that Crenshaw and Bouwknecht et al. "do not specifically teach a thermosol or pad/steam dyeing process for forming a multicolored fabric, and the other requisite components as recited by the instant claims", and stated that "Fadler nee Jack et al. teach a process for obtaining multicolor effects on textiles made of polyester fibers and blends thereof with cellulosic fibers, by locally applying an aqueous solution of alkaline agents, either thickened or not and free from oxidizing or reducing agents, onto a dried or partially dehydrated unfixed pad-dyeing produced on said fiber material using a disperse dyestuff, allowing the solution to act on the dyeing, thermosoling the material to fix the dyestuff." The Examiner then concludes that it "would have been obvious to one of ordinary skill in the art, at the time the invention was made, to utilize a thermosol or pad/steam dyeing process for forming a multicolored fabric in the process taught by Crenshaw and Bouwknecht et al., with a reasonable expectation of success, because Fadler nee Jack et al. illustrate the thermosol or pad-steam dyeing process for forming a multicolored fabric and further, one skilled in the art would be motivated to combine the teachings of Crenshaw and Bouwknecht et al. with the teachings of Fadler nee Jack et al. to form a multicolored patterned fabric since Crenshaw and Bouwknecht et al. teach the utility of various methods of dyeing in general."

As noted in the previous Response, Fadler nee Jack et al. is directed to a method involving locally applying an aqueous solution of an alkaline agent onto an unfixed dye, and thermosoling the material so that the alkaline agent destroys the physical and chemical structure of the dyestuff. In order for this process to work, it requires the use of disperse dyes with a sensitivity to alkali, reactive dyes, and cotton in the fabric. In other words, Fadler nee Jack requires the destruction of dye molecules to achieve an effect, rather than a mechanical inhibition of dyes as set forth in the instant invention. Therefore, this process is clearly distinct from that of the instant invention, and there is no disclosure or suggestion to combine it with the other two references to achieve the instant invention.

Because the claims are maintained to be in condition for allowance, withdrawal of the pending rejections and issuance of the application are respectfully requested. Should the Examiner find that any issues remain outstanding following consideration of this Response, she is invited to telephone the undersigned in the interest of resolving such issues in an expedient manner.

Respectfully submitted,



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